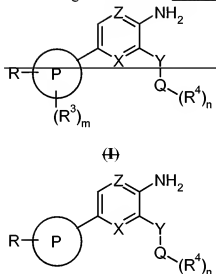


**Amendment to the Claims:**

This listing of claims will replace all previous versions, and listings, of claims in this application.

**Listing of Claims:**

1. (currently amended) A compound ~~having the formula I~~ of the following formula



wherein:

Z is N;

Y is  $\text{CONR}^5$ ,  $\text{NR}^5\text{CO}$ ,  $\text{SO}_2\text{NR}^5$ ,  $\text{NR}^5\text{SO}_2$ ,  $\text{CH}_2\text{NR}^5$ ,  $\text{NR}^5\text{CONR}^5$ ,  $\text{CH}_2\text{CO}$ ,  $\text{CO}$  or  $\text{CH}_2\text{O}$ ;

X is N;

P is phenyl;

Q is  $\text{C}_{1-6}\text{alkyl}$ ,  $\text{C}_{2-6}\text{alkenyl}$  or  $\text{C}_{2-6}\text{alkynyl}$ ;

R is  $\text{C}_{0-6}\text{alkyl}(\text{SO}_2)\text{NR}^1\text{R}^2$ ;

$\text{R}^1$  and  $\text{R}^2$  are independently selected from hydrogen,  $\text{C}_{1-6}\text{alkyl}$ ,  $\text{C}_{2-6}\text{alkenyl}$ ,  $\text{C}_{2-6}\text{alkynyl}$ ,  $\text{C}_{0-6}\text{alkylC}_{2-6}\text{cycloalkyl}$ ,  $\text{C}_{0-6}\text{alkylheterocycloalkyl}$ ,  $\text{C}_{1-6}\text{alkylNR}^6\text{R}^7$ ,  $\text{C}_{0-6}\text{alkylaryl}$  and  $\text{C}_{0-6}\text{alkylheteroaryl}$ , wherein any  $\text{C}_{1-6}\text{alkyl}$ ,  $\text{C}_{2-6}\text{alkenyl}$ ,  $\text{C}_{2-6}\text{alkynyl}$ ,  $\text{C}_{0-6}\text{alkylC}_{2-6}\text{cycloalkyl}$ ,  $\text{C}_{0-6}\text{alkylheterocycloalkyl}$ ,  $\text{C}_{0-6}\text{alkylaryl}$ ,  $\text{C}_{0-6}\text{alkylheteroaryl}$  may be substituted by one or more A;

R<sup>1</sup> and R<sup>2</sup> [[may]] together form a substituted 5 or 6 membered heterocyclic ring containing one or more heteroatoms independently selected from N, O or S, which heterocyclic ring may be optionally substituted by A;

R<sup>3</sup> is independently selected from halogen, nitro, CHO, C<sub>0-6</sub>alkylCN, OC<sub>1-6</sub>alkylCN, C<sub>0-6</sub>alkylOR<sup>6</sup>, OC<sub>1-6</sub>alkylOR<sup>6</sup>, fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, trifluoromethoxy, C<sub>0-6</sub>alkylNR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylOC<sub>1-6</sub>alkylNR<sup>6</sup>R<sup>7</sup>, NR<sup>6</sup>OR<sup>7</sup>, C<sub>0-6</sub>alkylCO<sub>2</sub>R<sup>6</sup>, OC<sub>1-6</sub>alkylCO<sub>2</sub>R<sup>6</sup>, C<sub>0-6</sub>alkylCONR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylCONR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>(CO)R<sup>7</sup>, C<sub>0-6</sub>alkylNR<sup>6</sup>(CO)R<sup>7</sup>, O(CO)NR<sup>6</sup>R<sup>7</sup>, NR<sup>6</sup>(CO)OR<sup>7</sup>, NR<sup>6</sup>(CO)NR<sup>6</sup>R<sup>7</sup>, O(CO)OR<sup>6</sup>, O(CO)R<sup>6</sup>, C<sub>0-6</sub>alkylCOR<sup>6</sup>, OC<sub>1-6</sub>alkylCOR<sup>6</sup>, NR<sup>6</sup>(CO)(CO)R<sup>6</sup>, NR<sup>6</sup>(CO)(CO)NR<sup>6</sup>R<sup>7</sup>, SR<sup>6</sup>, C<sub>0-6</sub>alkyl(SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>(SO<sub>2</sub>)R<sup>7</sup>, OC<sub>0-6</sub>alkyl(SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, C<sub>0-6</sub>alkyl(SO)NR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkyl(SO)NR<sup>6</sup>R<sup>7</sup>, SO<sub>2</sub>R<sup>6</sup>, C<sub>0-6</sub>alkylNR<sup>6</sup>(SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, C<sub>0-6</sub>alkylNR<sup>6</sup>(SO)R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>(SO)R<sup>7</sup>, OC<sub>0-6</sub>alkylSO<sub>2</sub>R<sup>6</sup>, C<sub>0-6</sub>alkylSO<sub>2</sub>R<sup>6</sup>, C<sub>0-6</sub>alkylSOR<sup>6</sup>, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>2-6</sub>cycloalkyl, C<sub>0-6</sub>alkylaryl and C<sub>0-6</sub>alkylheteroaryl, wherein any C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>2-6</sub>cycloalkyl, C<sub>0-6</sub>alkylaryl and C<sub>0-6</sub>alkylheteroaryl may be optionally substituted by one or more A;

R<sup>4</sup> is independently selected from halogen, nitro, CHO, CN, OC<sub>1-6</sub>alkylCN, OR<sup>6</sup>, OC<sub>1-6</sub>alkylOR<sup>6</sup>, fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, trifluoromethoxy, NR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>R<sup>7</sup>, NR<sup>6</sup>OR<sup>7</sup>, CO<sub>2</sub>R<sup>6</sup>, OC<sub>1-6</sub>alkylCO<sub>2</sub>R<sup>6</sup>, CONR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylCONR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>(CO)R<sup>7</sup>, NR<sup>6</sup>(CO)R<sup>7</sup>, O(CO)NR<sup>6</sup>R<sup>7</sup>, NR<sup>6</sup>(CO)OR<sup>7</sup>, NR<sup>6</sup>(CO)NR<sup>6</sup>R<sup>7</sup>, O(CO)OR<sup>6</sup>, O(CO)R<sup>6</sup>, COR<sup>6</sup>, OC<sub>1-6</sub>alkylCOR<sup>6</sup>, NR<sup>6</sup>(CO)(CO)R<sup>6</sup>, NR<sup>6</sup>(CO)(CO)NR<sup>6</sup>R<sup>7</sup>, SR<sup>6</sup>, (SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>(SO<sub>2</sub>)R<sup>7</sup>, OC<sub>0-6</sub>alkyl(SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, (SO)NR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkyl(SO)NR<sup>6</sup>R<sup>7</sup>, SO<sub>2</sub>R<sup>6</sup>, NR<sup>6</sup>(SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, NR<sup>6</sup>(SO)R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>(SO)R<sup>7</sup>, OC<sub>0-6</sub>alkylSO<sub>2</sub>R<sup>6</sup>, SO<sub>2</sub>R<sup>6</sup>, SOR<sup>6</sup>, C<sub>2-6</sub>cycloalkyl, CN, OR<sup>6</sup>, CONR<sup>6</sup>R<sup>7</sup>, NR<sup>6</sup>COR<sup>7</sup>, (SO)NR<sup>6</sup>R<sup>7</sup>, SO<sub>2</sub>R<sup>6</sup>, phenyl, a 5 or 6 membered heteroaromatic ring containing one or more heteroatoms independently selected from N, O, or S, or a 5 or 6 membered heterocyclic ring containing one or more heteroatoms independently selected from N, O, or S which heterocyclic group may be saturated or unsaturated, and said phenyl ring or 5 or 6 membered heteroaromatic ring or 5 or 6 membered heterocyclic ring may optionally be fused with a 5 or 6 membered saturated, partially saturated or unsaturated ring containing atoms independently

selected from C, N, O or S wherein any C<sub>2-6</sub>cycloalkyl, phenyl, 5 or 6 membered heteroaromatic ring with one or two heteroatoms selected independently from N, O, or S or a 5 or 6 membered heterocyclic containing one or two heteroatoms selected independently from N, O, or S; may be optionally substituted by one or more A;

m is 0;

n is [[0,] 1, 2, 3 or 4;

R<sup>5</sup> is hydrogen or C<sub>1-6</sub>alkyl;

R<sup>6</sup> and R<sup>7</sup> are independently selected from hydrogen, or C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>2-6</sub>cycloalkyl, C<sub>0-6</sub>alkylaryl, C<sub>0-6</sub>alkylheteroaryl and C<sub>1-6</sub>alkylNR<sup>8</sup>R<sup>9</sup>;

R<sup>6</sup> and R<sup>7</sup> may together form a substituted 5 or 6 membered heterocyclic ring containing one or more heteroatoms independently selected from N, O or S, which heterocyclic ring may be optionally substituted by A and wherein a CH<sub>2</sub> group may optionally be replaced by a CO group;

R<sup>8</sup> and R<sup>9</sup> are independently selected from hydrogen, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>2-6</sub>cycloalkyl, C<sub>0-6</sub>alkylaryl and C<sub>0-6</sub>alkylheteroaryl;

R<sup>8</sup> and R<sup>9</sup> may together form a 5 or 6 membered heterocyclic ring containing one or more heteroatoms selected from N, O or S, which heterocyclic ring may be optionally substituted by A;

R<sup>10</sup> is hydrogen, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>2-6</sub>cycloalkyl, C<sub>0-6</sub>alkylaryl, C<sub>0-6</sub>alkylheteroaryl or C<sub>1-6</sub>alkylNR<sup>8</sup>R<sup>9</sup>;

R<sup>11</sup> is C<sub>1-6</sub>alkylNR<sup>8</sup>R<sup>9</sup>;

R<sup>10</sup> and R<sup>11</sup> may together form a 5 or 6 membered heterocyclic ring containing one or more heteroatoms selected from N, O or S, which heterocyclic ring may be optionally substituted by A;

R<sup>12</sup> is a 5 or 6 membered heterocyclic ring containing one or more heteroatoms independently selected from N, O or S, which heterocyclic ring may be optionally substituted by A; wherein any C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>2-6</sub>cycloalkyl, C<sub>0-6</sub>alkylheterocycloalkyl, C<sub>0-6</sub>alkylaryl, C<sub>0-6</sub>alkylheteroaryl defined under R<sup>5</sup> to R<sup>12</sup> may be substituted by one or more A; A is oxo (=O), nitro, OR<sup>6</sup> or C<sub>1-6</sub>alkyl halo, oxo (=O), nitro, CHO, CN, OR<sup>6</sup>, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>2-6</sub>cycloalkyl, fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, trifluoromethoxy, C<sub>0-6</sub>alkylNR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>R<sup>7</sup>, CO<sub>2</sub>R<sup>8</sup>;

$\text{CONR}^6\text{R}^7$ ,  $\text{NR}^6(\text{CO})\text{R}^6$ ,  $\text{O}(\text{CO})\text{R}^6$ ,  $\text{COR}^6$ ,  $\text{SR}^6$ ,  $(\text{SO}_2)\text{NR}^6\text{R}^7$ ,  $(\text{SO})\text{NR}^6\text{R}^7$ ,  $\text{SO}_2\text{R}^6$ ,  $\text{SO}_2\text{R}^6$  or  $\text{SOR}^6$ ;

as a free base or a pharmaceutically acceptable salt, solvate or solvate of a salt thereof.

Claim 2 (cancelled).

3. (previously presented) A compound according to claim 1, wherein  $\text{R}^1$  and  $\text{R}^2$  in  $\text{C}_{0-6}\text{alkyl}(\text{SO}_2)\text{NR}^1\text{R}^2$  together form a substituted 5 or 6 membered heterocyclic ring containing one or more heteroatoms selected from N, O or S.

4. (original) A compound according to claim 3, wherein said heterocyclic ring comprises one or more N heteroatoms and said heterocyclic ring is optionally substituted by A, preferably a  $\text{C}_{1-6}\text{alkyl}$ .

5. (previously presented) A compound according to any one of claims 1, 3 or 4, wherein Y is  $\text{CONR}^5$ ;  $\text{R}^5$  is hydrogen; Q is  $\text{C}_{1-6}\text{alkyl}$ ;  $\text{R}^4$  is selected from: phenyl, 5 or 6 membered heteroaromatic ring containing one or more heteroatoms independently selected from N, O, or S or a 5 or 6 membered heterocyclic ring containing one or two heteroatoms selected independently from N, O, or S which heterocyclic group may be saturated or unsaturated, CN,  $\text{OR}^6$ ,  $\text{SO}_2\text{R}^6$ ,  $\text{NR}^6(\text{CO})\text{R}^7$ ,  $(\text{SO}_2)\text{NR}^6\text{R}^7$ , and  $\text{CONR}^6\text{R}^7$ ; and n is 1; said phenyl or 5 or 6 membered heterocyclic ring optionally substituted by A.

6. (original) A compound according to claim 5, wherein A is selected from  $\text{OR}^6$ ,  $\text{C}_{1-6}\text{alkyl}$ , oxo (=O) and nitro; and  $\text{R}^6$  and/or  $\text{R}^7$  is selected from  $\text{C}_{1-6}\text{alkyl}$  and hydrogen.

7. (currently amended) A compound which is

3-Amino-*N*-(2-cyanoethyl)-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxamide;

3-Amino-*N*-(3-amino-3-oxopropyl)-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxamide;

3-Amino-*N*-(2-nitrobenzyl)-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxamide;

3-Amino-*N*-(2-methoxybenzyl)-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxamide;

3-Amino-*N*-(3-morpholin-4-ylpropyl)-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxamide;

3-Amino-*N*-[3-(4-methylpiperazin-1-yl)propyl]-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxamide;

as a free base or a pharmaceutically acceptable salt, solvate or solvate of a salt thereof;

3-Amino-*N*-(2-morpholin-4-ylethyl)-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxamide hydrochloride;

3-Amino-*N*-[2-(1*H*-imidazol-4-yl)ethyl]-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxamide hydrochloride;

3-Amino-*N*-[3-(1*H*-imidazol-1-yl)propyl]-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxamide hydrochloride;

3-Amino-6-{4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl}-*N*-(2-thien-2-ylethyl)pyrazine-2-carboxamide hydrochloride;

3-Amino-6-{4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl}-*N*-(thien-2-ylmethyl)pyrazine-2-carboxamide hydrochloride;

3-Amino-*N*-(2-methoxyethyl)-6-{4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl}pyrazine-2-carboxamide hydrochloride;

3-Amino-*N*-(3-methoxypropyl)-6-{4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl}pyrazine-2-carboxamide hydrochloride;

3-Amino-6-{4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl}-*N*-[3-(2-oxopyrrolidin-1-yl)propyl]pyrazine-2-carboxamide hydrochloride;

3-Amino-*N*-(cyanomethyl)-6-{4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl}pyrazine-2-carboxamide dihydrochloride;

3-Amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-*N*-[2-(1*H*-pyrrol-1-yl)ethyl]-2-pyrazinecarboxamide hydrochloride;  
3-Amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-*N*-[2-(methylsulfonyl)ethyl]-2-pyrazinecarboxamide hydrochloride;  
*N*-[2-(Acetylamino)ethyl]-3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-2-pyrazinecarboxamide hydrochloride;  
3-Amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-*N*-[2-(2-oxo-1-imidazolidinyl)ethyl]-2-pyrazinecarboxamide hydrochloride;  
3-Amino-*N*-[2-(aminosulfonyl)ethyl]-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-2-pyrazinecarboxamide hydrochloride;  
or as a free base or an alternative pharmaceutically acceptable salt, solvate or solvate of a salt thereof;

8. (previously presented) A pharmaceutical formulation comprising as active ingredient a therapeutically effective amount of the compound according to any one of claims 1 or 7 in association with pharmaceutically acceptable carriers or diluents.

Claims 9 to 16. (Cancelled)

17. (withdrawn) A method of prevention and/or treatment of conditions associated with glycogen synthase kinase-3, comprising administering to a mammal, including man in need of such prevention and/or treatment, a therapeutically effective amount of a compound of formula I as defined in any one of claims 1 or 7.

18. (withdrawn) A method of prevention and/or treatment of dementia, Alzheimer's Disease, Parkinson's Disease, Frontotemporal dementia Parkinson's Type, Parkinson dementia complex

of Guam, HIV dementia, diseases with associated neurofibrillar tangle pathologies and dementia pugilistica, comprising administering to a mammal, including man in need of such prevention and/or treatment, a therapeutically effective amount of a compound of formula **I** as defined in any one of claims 1 or 7.

19. (withdrawn) The method according to claim 18, wherein the prevention and/or treatment is for Alzheimer's Disease.

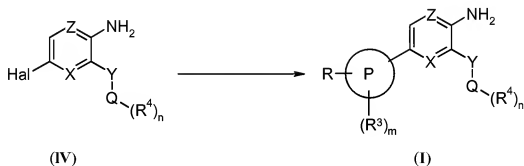
20. (withdrawn) A method of prevention and/or treatment of amyotrophic lateral sclerosis, corticobasal degeneration, Down syndrome, Huntington's Disease, postencephalitic parkinsonism, progressive supranuclear palsy, Pick's Disease, Niemann-Pick's Disease, stroke, head trauma and other chronic neurodegenerative diseases, Bipolar Disease, affective disorders, depression, schizophrenia, cognitive disorders, hair loss and contraceptive medication, Type I and Type II diabetes, diabetic neuropathy and diabetes related disorders, comprising administering to a mammal, including man in need of such prevention and/or treatment, a therapeutically effective amount of a compound of formula **I** as defined in any one of claims 1 or 7.

21. (withdrawn) The method according to claim 18, wherein the prevention and/or treatment is of Type I or Type II diabetes, diabetic neuropathy or diabetes related disorders.

22. (withdrawn) A method of prevention and/or treatment of predemented states, Mild Cognitive Impairment, Age-Associated Memory Impairment, Age-Related Cognitive Decline, Cognitive Impairment No Dementia, mild cognitive decline, mild neurocognitive decline, Late-Life Forgetfulness, memory impairment and cognitive impairment, vascular dementia, dementia with Lewy bodies, Frontotemporal dementia and androgenetic alopecia, comprising administering to a

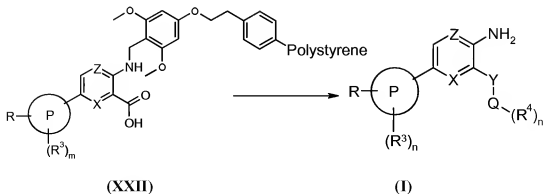
mammal, including man in need of such prevention and/or treatment, a therapeutically effective amount of a compound of formula I as defined in any one of claims 1 or 7.

23. (withdrawn) A process for the preparation of a compound of formula I according to claim 1, wherein Y, X, Z, P, Q, R, R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, A, m and n are defined as in formula I, comprising of de-halogen coupling of a compound of formula IV with an appropriate aryl species;



to give a compound of formula I.

24. (withdrawn) A process for the preparation of a compound of formula I according to claim 1, wherein Y, X, Z, P, Q, R, R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, A, m and n are defined as in formula I, comprising reacting of a compound of formula XXII:





wherein the reaction is being performed by activation of a compound of formula XXII by treatment with a coupling agent or with an acyl halide reagent followed by treatment with the appropriate amine, followed by cleavage of the solid phase moiety by treatment with an suitable acid in a suitable solvent, and where the reaction temperature is between 0 °C and reflux, to give a compound of formula I.

25 and 26. (cancelled)

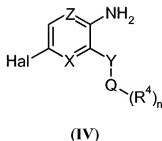
27. (withdrawn) A compound which is

4-(Pyrrolidin-1-ylsulfonyl)phenylboronic acid;

4-[(4-Methylpiperazin-1-yl)sulfonyl]phenylboronic acid;

as a free base or a salt, solvate or solvate of a salt thereof.

28. (withdrawn) A compound of formula IV



wherein

Y is  $\text{CONR}^5$ ,  $\text{NR}^5\text{CO}$ ,  $\text{SO}_2\text{NR}^5$ ,  $\text{NR}^5\text{SO}_2$ ,  $\text{CH}_2\text{NR}^5\text{NR}^5\text{CONR}^5$ ,  $\text{CH}_2\text{CO}$ ,  $\text{CO}$  or  $\text{CH}_2\text{O}$ ;

X is CH or N;

Z is N;

Q is  $\text{C}_{1-6}\text{alkyl}$ ,  $\text{C}_{2-6}\text{alkenyl}$  or  $\text{C}_{2-6}\text{alkynyl}$ ;

$\text{R}^4$  is independently selected from halogen, nitro, CHO, CN,  $\text{OC}_{1-6}\text{alkylCN}$ ,  $\text{OR}^6$ ,  $\text{OC}_{1-6}\text{alkylOR}^6$ , fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, trifluoromethoxy,  $\text{NR}^6\text{R}^7$ ,  $\text{OC}_{1-6}\text{alkylNR}^6\text{R}^7$ ,  $\text{NR}^6\text{OR}^7$ ,  $\text{CO}_2\text{R}^6$ ,  $\text{OC}_{1-6}\text{alkylCO}_2\text{R}^6$ ,  $\text{CONR}^6\text{R}^7$ ,

OC<sub>1-6</sub>alkylCONR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>(CO)R<sup>7</sup>, NR<sup>6</sup>(CO)R<sup>7</sup>, O(CO)NR<sup>6</sup>R<sup>7</sup>, NR<sup>6</sup>(CO)OR<sup>7</sup>, NR<sup>6</sup>(CO)NR<sup>6</sup>R<sup>7</sup>, O(CO)OR<sup>6</sup>, O(CO)R<sup>6</sup>, COR<sup>6</sup>, OC<sub>1-6</sub>alkylCOR<sup>6</sup>, NR<sup>6</sup>(CO)(CO)R<sup>6</sup>, NR<sup>6</sup>(CO)(CO)NR<sup>6</sup>R<sup>7</sup>, SR<sup>6</sup>, (SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>(SO<sub>2</sub>)R<sup>7</sup>, OC<sub>0-6</sub>alkyl(SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, (SO)NR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkyl(SO)NR<sup>6</sup>R<sup>7</sup>, SO<sub>3</sub>R<sup>6</sup>, NR<sup>6</sup>(SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, NR<sup>6</sup>(SO)R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>(SO)R<sup>7</sup>, OC<sub>0-6</sub>alkylSO<sub>2</sub>R<sup>6</sup>, SO<sub>2</sub>R<sup>6</sup>, SOR<sup>6</sup>, C<sub>3-6</sub>cycloalkyl, phenyl, a 5 or 6 membered heteroaromatic ring containing one or more heteroatoms independently selected from N, O, or S, or a 5 or 6 membered heterocyclic ring containing one or more heteroatoms independently selected from N, O, or S which heterocyclic group may be saturated or unsaturated, and said phenyl ring or 5 or 6 membered heteroaromatic ring or 5 or 6 membered heterocyclic ring may optionally be fused with a 5 or 6 membered saturated, partially saturated or unsaturated ring containing atoms independently selected from C, N, O or S wherein any C<sub>3-6</sub>cycloalkyl, phenyl, 5 or 6 membered heteroaromatic ring with one or two heteroatoms selected independently from N, O, or S or a 5 or 6 membered heterocyclic ring containing one or two heteroatoms selected independently from N, O, or S; may be optionally be substituted by one or more A;

R<sup>5</sup> is hydrogen or C<sub>1-6</sub>alkyl

R<sup>6</sup> and R<sup>7</sup> are independently selected from hydrogen, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, C<sub>0-6</sub>alkylaryl, C<sub>0-6</sub>alkylheteroaryl and C<sub>1-6</sub>alkylNR<sup>8</sup>R<sup>9</sup>;

R<sup>6</sup> and R<sup>7</sup> may together form a substituted 5 or 6 membered heterocyclic ring containing one or more heteroatoms independently selected from N, O or S, which heterocyclic ring may be optionally substituted by A and wherein a CH<sub>2</sub> group may optionally be replaced by a CO group;

R<sup>8</sup> and R<sup>9</sup> are independently selected from hydrogen, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, C<sub>0-6</sub>alkylaryl and C<sub>0-6</sub>alkylheteroaryl;

R<sup>8</sup> and R<sup>9</sup> may together form a 5 or 6 membered heterocyclic ring containing one or more heteroatoms selected from N, O or S, which heterocyclic ring may be optionally substituted by A;

Hal is halogen;

n is 0, 1, 2, 3 or 4;

A is halogen, oxo (=O), nitro, CHO, CN, OR<sup>6</sup>, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl,

C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy,

difluoromethoxy, trifluoromethoxy,  $C_{0-6}alkylNR^6R^7$ ,  $OC_{1-6}alkylNR^6R^7$ ,  $CO_2R^8$ ,  $CONR^6R^7$ ,  $NR^6(CO)R^6$ ,  $O(CO)R^6$ ,  $COR^6$ ,  $SR^6$ ,  $(SO_2)NR^6R^7$ ,  $(SO)NR^6R^7$ ,  $SO_3R^6$ ,  $SO_2R^6$  or  $SOR^6$ ,  
as a free base or a salt, solvate or solvate of a salt thereof.

29. (withdrawn) A compound according to claim 28, wherein

Y is  $CONR^5$ ;

X is N;

Q is  $C_{1-6}alkyl$ ;

$R^4$  is independently selected from CN,  $OR^6$ , a 5 or 6 membered heteroaromatic ring containing one or more heteroatoms independently selected from N, O, or S, or a 5 or 6 membered heterocyclic ring containing one or more heteroatoms independently selected from N, O, or S which heterocyclic group may be saturated or unsaturated, wherein any 5 or 6 membered heterocyclic ring containing one or two heteroatoms selected independently from N, O, or S; may be optionally be substituted by A;

$R^5$  is hydrogen;

$R^6$  is,  $C_{1-6}alkyl$ ;

n is 1;

A is oxo (=O);

as a free base or a salt, solvate or solvate of a salt thereof.

30. (withdrawn) A compound which is

3-Amino-6-bromo-*N*-(2-morpholin-4-ylethyl)pyrazine-2-carboxamide;

3-Amino-6-bromo-*N*-[2-(1*H*-imidazol-4-yl)ethyl]pyrazine-2-carboxamide;

3-Amino-6-bromo-*N*-[3-(1*H*-imidazol-1-yl)propyl]pyrazine-2-carboxamide;

3-Amino-6-bromo-*N*-(2-thien-2-ylethyl)pyrazine-2-carboxamide;

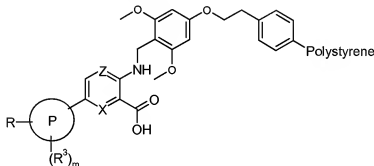
3-Amino-6-bromo-*N*-(thien-2-ylmethyl)pyrazine-2-carboxamide;

3-Amino-6-bromo-*N*-(2-methoxyethyl)pyrazine-2-carboxamide;

3-Amino-6-bromo-*N*-(3-methoxypropyl)pyrazine-2-carboxamide;

3-Amino-6-bromo-*N*-[3-(2-oxopyrrolidin-1-yl)propyl]pyrazine-2-carboxamide;  
3-Amino-6-bromo-*N*-(cyanomethyl)pyrazine-2-carboxamide;  
as a free base or a salt, solvate or solvate of a salt thereof.

31. (withdrawn) A compound of formula **XXII**



(XXII)

wherein:

Z is N;

X is CH or N;

P is phenyl or a 5 or 6 membered heteroaromatic ring containing one or more heteroatoms selected from N, O or S and said phenyl ring or 5 or 6 membered heteroaromatic ring may optionally be fused with a 5 or 6 membered saturated, partially saturated or unsaturated ring containing atoms independently selected from C, N, O or S;

R is CHO, fluoromethoxy, difluoromethoxy, trifluoromethoxy, C<sub>0-6</sub>alkyl(SO<sub>2</sub>)NR<sup>1</sup>R<sup>2</sup>, OC<sub>0-6</sub>alkyl(SO<sub>2</sub>)NR<sup>1</sup>R<sup>2</sup>, OC<sub>1-6</sub>alkyl(SO)NR<sup>1</sup>R<sup>2</sup>, C<sub>1-6</sub>alkyl(SO)NR<sup>1</sup>R<sup>2</sup>, C<sub>0-6</sub>alkylINR<sup>1</sup>(SO)R<sup>2</sup>, OC<sub>1-6</sub>alkylINR<sup>1</sup>(SO)R<sup>2</sup>, C<sub>0-6</sub>alkylINR<sup>1</sup>(SO<sub>2</sub>)NR<sup>1</sup>R<sup>2</sup>, OC<sub>1-6</sub>alkylINR<sup>1</sup>(SO<sub>2</sub>)R<sup>2</sup>, C<sub>0-6</sub>alkyl(SO<sub>2</sub>)C<sub>1-6</sub>alkylINR<sup>1</sup>R<sup>2</sup>, OC<sub>0-6</sub>alkyl(SO<sub>2</sub>)C<sub>1-6</sub>alkylINR<sup>1</sup>R<sup>2</sup>, C<sub>0-6</sub>alkyl(SO)C<sub>1-6</sub>alkylINR<sup>1</sup>R<sup>2</sup>, OC<sub>1-6</sub>alkyl(SO)C<sub>1-6</sub>alkylINR<sup>1</sup>R<sup>2</sup>, C<sub>0-6</sub>alkylISC<sub>1-6</sub>alkylINR<sup>1</sup>R<sup>2</sup>, OC<sub>1-6</sub>alkylISC<sub>1-6</sub>alkylINR<sup>1</sup>R<sup>2</sup>, OC<sub>1-6</sub>alkylOC<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkylOC<sub>1-6</sub>alkylINR<sup>1</sup>R<sup>2</sup>, OC<sub>1-6</sub>alkylOC<sub>1-6</sub>alkylINR<sup>1</sup>R<sup>2</sup>, C<sub>0-6</sub>alkyl(CONR<sup>10</sup>R<sup>11</sup>), OC<sub>0-6</sub>alkyl(CONR<sup>1</sup>R<sup>2</sup>), OC<sub>1-6</sub>alkylINR<sup>1</sup>R<sup>2</sup>, C<sub>0-6</sub>alkylINR<sup>10</sup>(CO)R<sup>11</sup>, OC<sub>1-6</sub>alkylINR<sup>1</sup>(CO)R<sup>2</sup>, C<sub>0-6</sub>alkylINR<sup>11</sup>(CO)R<sup>10</sup>, C<sub>0-6</sub>alkylCOR<sup>11</sup>, OC<sub>1-6</sub>alkylCOR<sup>1</sup>, C<sub>0-6</sub>alkylINR<sup>10</sup>R<sup>11</sup>, C<sub>0-6</sub>alkylO(CO)R<sup>11</sup>, OC<sub>1-6</sub>alkylO(CO)R<sup>1</sup>, C<sub>0-6</sub>alkylC(NR<sup>10</sup>)NR<sup>10</sup>R<sup>11</sup>,

$C_{0-6}alkylC(NR^{11})N(R^{10})_2$ ,  $OC_{0-6}alkylC(NR^1)NR^1R^2$ ,  $C_{0-6}alkylNR^{10}(CO)OR^{11}$ ,  
 $OC_{1-6}alkylNR^1(CO)OR^2$ ,  $C_{0-6}alkylNR^{11}(CO)OR^{10}$ ,  $OC_{1-6}alkylCN$ ,  $NR^1OR^2$ ,  $C_{0-6}alkyl(CO)OR^8$ ,  
 $OC_{1-6}alkyl(CO)OR^1$ ,  $NR^1(CO)NR^1R^2$ ,  $NR^1(CO)(CO)R^2$ ,  $NR^1(CO)(CO)NR^1R^2$ ,  $OR^{12}$  or  $SO_3R^1$ ;  
 $R^1$  and  $R^2$  are independently selected from hydrogen,  $C_{1-6}alkyl$ ,  $C_{2-6}alkenyl$ ,  $C_{2-6}alkynyl$ ,  
 $C_{0-6}alkylC_{3-6}cycloalkyl$ ,  $C_{0-6}alkylheterocycloalkyl$ ,  $C_{1-6}alkylNR^6R^7$ ,  $C_{0-6}alkylaryl$  and  
 $C_{0-6}alkylheteroaryl$ , wherein any  $C_{1-6}alkyl$ ,  $C_{2-6}alkenyl$ ,  $C_{2-6}alkynyl$ ,  $C_{0-6}alkylC_{3-6}cycloalkyl$ ,  
 $C_{0-6}alkylheterocycloalkyl$ ,  $C_{0-6}alkylaryl$ ,  $C_{0-6}alkylheteroaryl$  may be substituted by one or more  
A;

$R^1$  and  $R^2$  may together form a substituted 5 or 6 membered heterocyclic ring containing one or  
more heteroatoms independently selected from N, O or S, which heterocyclic ring may be  
optionally substituted by A;

$R^3$  is independently selected from halogen, nitro, CHO,  $C_{0-6}alkylCN$ ,  $OC_{1-6}alkylCN$ ,  
 $C_{0-6}alkylOR^6$ ,  $OC_{1-6}alkylOR^6$ , fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy,  
difluoromethoxy, trifluoromethoxy,  $C_{0-6}alkylNR^6R^7$ ,  $OC_{1-6}alkylNR^6R^7$ ,  
 $OC_{1-6}alkylOC_{1-6}alkylNR^6R^7$ ,  $NR^6OR^7$ ,  $C_{0-6}alkylCO_2R^6$ ,  $OC_{1-6}alkylCO_2R^6$ ,  $C_{0-6}alkylCONR^6R^7$ ,  
 $OC_{1-6}alkylCONR^6R^7$ ,  $OC_{1-6}alkylNR^6(CO)R^7$ ,  $C_{0-6}alkylNR^6(CO)R^7$ ,  $O(CO)NR^6R^7$ ,  
 $NR^6(CO)OR^7$ ,  $NR^6(CO)NR^6R^7$ ,  $O(CO)OR^6$ ,  $O(CO)R^6$ ,  $C_{0-6}alkylCOR^6$ ,  $OC_{1-6}alkylCOR^6$ ,  
 $NR^6(CO)(CO)R^6$ ,  $NR^6(CO)(CO)NR^6R^7$ ,  $SR^6$ ,  $C_{0-6}alkyl(SO_2)NR^6R^7$ ,  $OC_{1-6}alkylNR^6(SO_2)R^7$ ,  
 $OC_{0-6}alkyl(SO_2)NR^6R^7$ ,  $C_{0-6}alkyl(SO)NR^6R^7$ ,  $OC_{1-6}alkyl(SO)NR^6R^7$ ,  $SO_3R^6$ ,  
 $C_{0-6}alkylNR^6(SO_2)NR^6R^7$ ,  $C_{0-6}alkylNR^6(SO)R^7$ ,  $OC_{1-6}alkylNR^6(SO)R^7$ ,  $OC_{0-6}alkylSO_2R^6$ ,  
 $C_{0-6}alkylSO_2R^6$ ,  $C_{0-6}alkylSOR^6$ ,  $C_{1-6}alkyl$ ,  $C_{2-6}alkenyl$ ,  $C_{2-6}alkynyl$ ,  $C_{0-6}alkylC_{3-6}cycloalkyl$ ,  
 $C_{0-6}alkylaryl$  and  $C_{0-6}alkylheteroaryl$ , wherein any  $C_{1-6}alkyl$ ,  $C_{2-6}alkenyl$ ,  $C_{2-6}alkynyl$ ,  
 $C_{0-6}alkylC_{3-6}cycloalkyl$ ,  $C_{0-6}alkylaryl$  and  $C_{0-6}alkylheteroaryl$  may be optionally substituted by  
one or more A;

$R^6$  and  $R^7$  are independently selected from hydrogen,  $C_{1-6}alkyl$ ,  $C_{2-6}alkenyl$ ,  $C_{2-6}alkynyl$ ,  
 $C_{0-6}alkylC_{3-6}cycloalkyl$ ,  $C_{0-6}alkylaryl$ ,  $C_{0-6}alkylheteroaryl$  and  $C_{1-6}alkylNR^8R^9$ ;  
 $R^6$  and  $R^7$  may together form a substituted 5 or 6 membered heterocyclic ring containing one or  
more heteroatoms independently selected from N, O or S, which heterocyclic ring may be  
optionally substituted by A and wherein a  $CH_2$  group may optionally be replaced by a CO group;

$R^8$  and  $R^9$  are independently selected from hydrogen,  $C_{1-6}$ alkyl,  $C_{2-6}$ alkenyl,  $C_{2-6}$ alkynyl,  $C_{0-6}$ alkyl $C_{3-6}$ cycloalkyl,  $C_{0-6}$ alkylaryl and  $C_{0-6}$ alkylheteroaryl;  
 $R^8$  and  $R^9$  may together form a 5 or 6 membered heterocyclic ring containing one or more heteroatoms selected from N, O or S, which heterocyclic ring may be optionally substituted by A;  
 $R^{10}$  is hydrogen,  $C_{1-6}$ alkyl,  $C_{2-6}$ alkenyl,  $C_{2-6}$ alkynyl,  $C_{0-6}$ alkyl $C_{3-6}$ cycloalkyl,  $C_{0-6}$ alkylaryl,  $C_{0-6}$ alkylheteroaryl or  $C_{1-6}$ alkyl $NR^8R^9$ ;  
 $R^{11}$  is  $C_{1-6}$ alkyl $NR^8R^9$ ;  
 $R^{10}$  and  $R^{11}$  may together form a 5 or 6 membered heterocyclic ring containing one or more heteroatoms selected from N, O or S, which heterocyclic ring may be optionally substituted by A;  
A is halogen, oxo (=O), nitro, CHO, CN,  $OR^6$ ,  $C_{1-6}$ alkyl,  $C_{2-6}$ alkenyl,  $C_{2-6}$ alkynyl,  $C_{0-6}$ alkyl $C_{3-6}$ cycloalkyl, fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, trifluoromethoxy,  $C_{0-6}$ alkyl $NR^6R^7$ ,  $OC_{1-6}$ alkyl $NR^6R^7$ ,  $CO_2R^8$ ,  $CONR^6R^7$ ,  $NR^6(CO)R^6$ ,  $O(CO)R^6$ ,  $COR^6$ ,  $SR^6$ ,  $(SO_2)NR^6R^7$ ,  $(SO)NR^6R^7$ ,  $SO_3R^6$ ,  $SO_2R^6$  or  $SOR^6$ ;  
m is 0, 1, 2, 3 or 4;  
as a free base or a salt, solvate or solvate of a salt thereof.

32. (withdrawn) A compound according to claim 31, wherein:

X is N;

P is phenyl;

R is  $C_{0-6}$ alkyl $(SO_2)NR^1R^2$ ;

$R^1$  and  $R^2$  may together form a substituted 5 or 6 membered heterocyclic ring containing one or more heteroatoms independently selected from N, O or S;

m is 0;

as a free base or a salt, solvate or solvate of a salt thereof.

33. (withdrawn) A compound which is

Methyl 3- {[2,6-dimethoxy-4-(2-phenylethoxy)benzyl]amino}-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxylate polystyrene;  
3- {[2,6-Dimethoxy-4-(2-phenylethoxy)benzyl]amino}-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxylic acid polystyrene;  
as a free base or a salt, solvate or solvate of a salt thereof.

34. (Cancelled).